

Tuberculosis in Indiana, 2002

Paul Britton, R.N., M.S.
ISDH TB Control Program

Monday, March 24 is World TB Day. It was on this day in 1882 that German microbiologist Robert Koch discovered *Mycobacterium tuberculosis*, the bacterium that causes tuberculosis (TB). TB continues to be one of the deadliest diseases in the world, with 8 million new cases and 3 million deaths reported worldwide each year. Approximately 95% of TB cases occur in developing countries where there are few resources to insure adequate treatment, and where HIV infection is common. TB is the number one killer of AIDS patients in the world.

Despite a modest increase in new cases in 2002, newly reported TB cases have declined dramatically in Indiana since the 1950s, especially over the last 10 years. During 2002, 128 new cases of TB were reported to the Indiana State Department of Health (ISDH). TB was reported by 33 (36%) of the 92 counties. Seven counties accounted for 67% of all cases. Long-term trends and new cases over the past 10 years are shown in figures 1 and 2 respectively.

Figure 1.

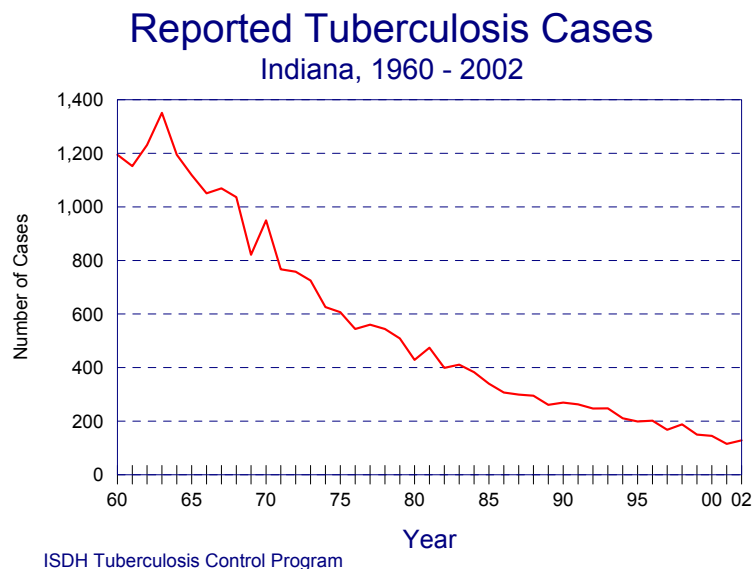
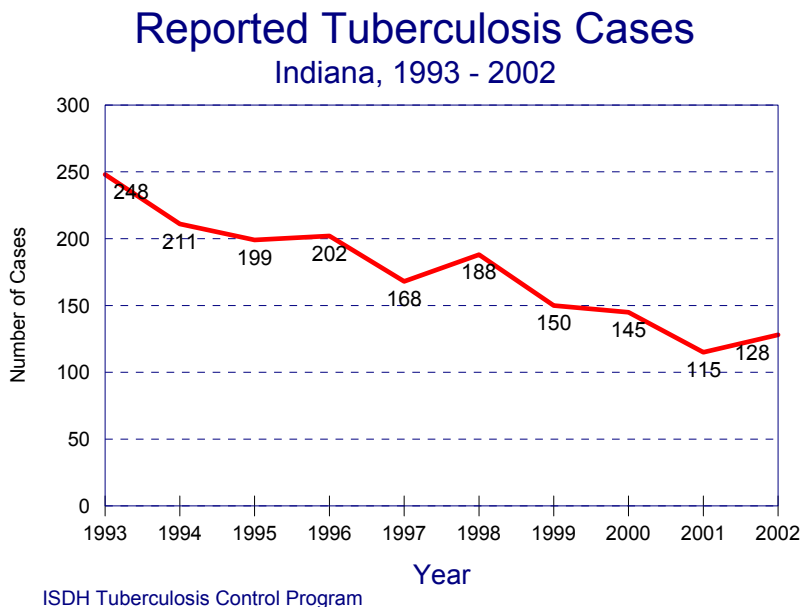


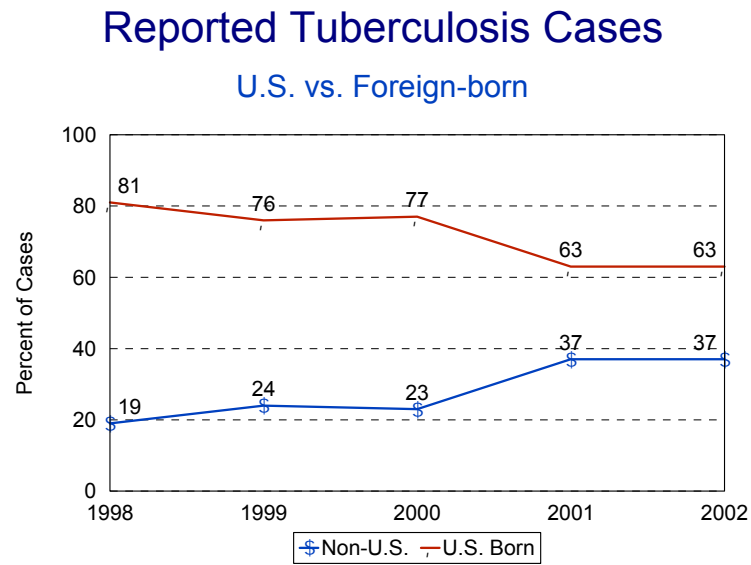
Figure 2.



Despite the long-term decline, the numbers of new cases have not declined in every single year. New cases increased by 11% from 2001. The majority of cases of TB disease develop in persons who were infected in the past, and it is not possible to predict who will become ill or when. Other factors also contributed to the increase.

- **Continued transmission among social contacts.** In one county, 3 secondary cases were linked by RFLP (restriction fragment length polymorphism) DNA fingerprinting analysis to a high school student with infectious tuberculosis who had recently moved from another state. A fourth case was linked by RFLP analysis to an outbreak 5 years ago. A second county had 2 cases that were also linked by DNA fingerprinting to 5 other cases reported from 4 different counties in 2000. A third case was linked epidemiologically to this group. All 8 cases involved heavy alcohol use and had either socialized at the same bars or were members of the same family. The 7 cases with matching DNA fingerprints matched the fingerprint of a TB case from central Indiana reported in 1995.
- **An unusually high number of cases among persons ≥ 85 years of age.** Of 40 cases reported in the > 65 age group, 14 (35%) were ≥ 85 years of age.
- **A trend of increasing numbers of cases among the foreign-born over the last four years.** Figure 3 shows the percentage of TB cases among the foreign-born versus U.S.-born. Figure 4 shows the countries of origin for the majority of cases.

Figure 3.

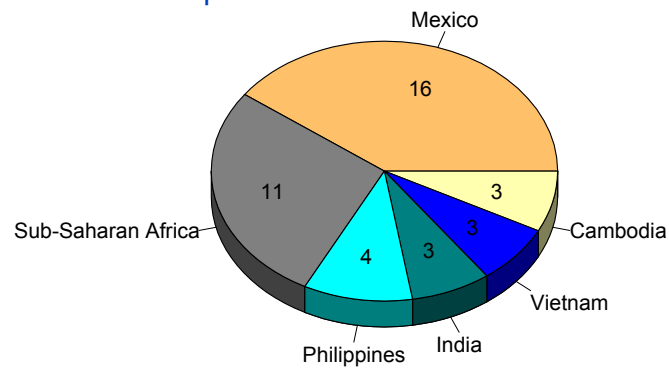


ISDH Tuberculosis Control Program

Figure 4.

Nationality of non-U.S. Born TB Cases

Numbers of Cases from the Most Frequently Represented Countries in 2002



ISDH Tuberculosis Control Program

Maintaining the decline in new TB cases hinges on the continued implementation of TB control core activities. The most important activity is the prompt identification and treatment of new TB cases, followed by the identification and treatment of infected contacts, and targeted testing and treatment of other persons likely to be infected. The last group includes persons born in countries where TB is common, and persons belonging to socio-economic groups who tend to live and socialize in settings where TB is transmitted. This group includes injection drug users, other substance abusers, and the homeless.

Finally, these activities are incorporated into a client-centered patient management system in which the local health department provides case management and physicians in private practice provide medical care. The ISDH TB Drug Program provides drugs at no cost to the patient. The state mycobacteriology laboratory provides specimen processing, culture identification and drug susceptibility testing at no cost to the patient or referring client laboratories. This integrated approach, combined with the use of directly observed therapy, helps to ensure that all TB patients are being managed appropriately and will complete treatment.

References:

1. Indiana State Department of Health Tuberculosis Information Management System database.
 2. Institute of Medicine. *Ending Neglect: The Elimination of Tuberculosis in the United States*. 2000.
-